

THE DEVIL'S GARDENS (speech 2 – Organize Your Speech)

INTRODUCTION

The Devil's Gardens. What thoughts does the phrase mean to you? Could it be a novel about the occult? How about a movie about a religious ritual? No... no... It's none of those. (long pause) . What I'm about to tell you is a strange phenomenon that takes place deep in the heart of the jungles of the Amazon Rainforest in Western Peru.

THE AMAZON RAINFOREST

Now when I say Amazon Rainforest, what images come to your mind? A dense jungle with wildflowers, and vines and trees, yes? The Amazon rainforest is a **wide expanse** of about 6 million sq kms and covers much of South America. That includes Peru, Brazil, Bolivia, Ecuador and Venezuela. At the **upper** canopy of the rainforest, the tops of trees reach 100 ft. and above. As a point of reference, this building is 50 feet high. So double the height of this building and that is where upper canopy starts. Then there is the middle layer. The middle layer is the densest layer of the rainforest. The growth at the **middle layer** is so dense that only **1 percent** of the sunlight above the forest canopy reach the **forest floor**. The rainforest is densely populated with a remarkable diversity of trees, vines, shrubs and wildflowers. A remarkable diversity.

THE GARDENS

So you ask, where do the Devil's Gardens come into the picture? Well, **randomly scattered** in this rainforest are patches of land that **do not** demonstrate this diversity. Instead, there is only **one** plant species that lives and thrives in each of these patches. The patches vary size, but the biggest is 1300 sq meters. How big is 1300 sq meters? What you see in this entire second floor is 1300 sq meters. The only tree that grows in these patches or gardens has the scientific name of Duroia Hirsuta. But let's call it the Hirsuta tree for short. Now here's what makes the patches or gardens remarkable. The Hirsuta trees grow to a maximum of only 12 feet. Contrast that to the towering height of 100 feet that starts the forest canopy. If you were walking in the the jungle and step into this garden you'd immediately notice the difference between **the garden** and the **surrounding vegetation**. It's as if you've entered into an exclusive orchard. And you know what, you get this strange feeling that someone or something has planted these Hirsuta trees.

THE SPIRITS

Who is this someone? Who do the native Peruvians say tend to these Gardens? Like in many other cultures, beliefs abound especially in and around a forest. The rainforest is said to be a dwelling place for many spirits – **some good** and **some... evil**. There is a spirit called the Chuyachaqui. This spirit typically takes the form of a dwarf with a hoof on **one leg** and a human foot on the **other**. It can also change its form into an old man who **befriends** you. But he actually deceives and misleads you until you are **lost** in the thick of the jungle. The Chuyachaqui is said to live in these gardens and tends the Hirsuta trees. The native Peruvians avoid these gardens in fear of this spirit, or at least traverse these gardens cautiously. Since most people equate the Chuyachaqui to an Evil Spirit or the Devil, the **phrase** "Devil's gardens" was coined. And for many, many generations, that is what they have been called... The Devil's Gardens.

THE STUDY

Well, that was until a band of biologists led by Megan Frederickson from Stanford University attempted to explain what was going on in the course of a **4-year** field study. A couple of months ago, the National Geographic released an intriguing story of how these biologists concluded that the "**devil**" responsible for these gardens was an ant species called Myrmelachista Schumanni. Or let's call it the Schumanni ant for short. So, why do these ants "tend" these Hirsuta trees? Well, among other things, these trees have **hollow** stems where the ants love to nest. But the answer to the mystery **doesn't stop** there. These ants, not only love these Hirsuta trees, but would kill any other non-hirsuta tree that will grow within the vicinity of their colony. How do they do this? By stinging these foreign plants with their built-in herbicide called formic acid. Formic acid is a simple organic acid and appears in all red ants.

THE TEST

To test this hypothesis, the biologists planted Cedar plants inside the garden. These are non-Hirsuta plants. And then, as if on cue, worker ants immediately **crawl out** and climb these Cedar plants. They **go straight** to the Cedar leaves. **Punch** a hole in the leaves and **bam! Inject** the leaves with formic acid. In **five** hours the Cedar leaves turn from green to brown. In **24 hours** the Cedar plant begins to die. In **five days**, all the leaves fall off leaving a **shriveled, withered**, dead Cedar plant. The idea is that by killing other plants, the ants create space for young Hirsuta saplings to grow, thereby not only **preserving** the ant colony but also allowing it to **expand**... as ants occupy new nesting sites in the saplings.

CONCLUSION

The study showed how effectively ants **can manipulate** their environment in order to **promote** their own survival. In many ways, the ants are one of the dominant animals in the Amazon rainforest. So the next time a lowly ant bites you... remember that its cousins **thousands** of miles across the globe do this same practice but for a different reason. And that is to tend what has been known for centuries as the The Devil's Gardens. Good Afternoon... OSPI Toastmasters.